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**(54) ETCHING METHOD  
OF SILICON OXIDE FILM  
BY IRRADIATION OF  
LIGHT**

(57) Abstract:

**PURPOSE:** To locally etch the silicon film by irradiating a fluorine source or a mixture of such fluorine source and hydrogen source with a light of predetermined wavelength and then placing it in contact with a silicon oxide film.

**CONSTITUTION:** A silicon film is locally etched by irradiating the fluorine source or a mixture of such fluorine source and hydrogen source with the light in the wavelength of 150W400nm and then placing it with silicon oxide film. This fluorine source should be hydrogen fluoride, C<sub>2</sub>Cl<sub>2</sub>F<sub>4</sub>, CHF<sub>2</sub>CH<sub>3</sub>, SF<sub>6</sub>, XeF<sub>2</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>2</sub>F<sub>8</sub>, CHF<sub>3</sub>, CClF<sub>3</sub>, hydrogen trifluoride, carbon tetrafluoride, CBrF<sub>3</sub>, CClF<sub>2</sub>, C<sub>3</sub>ClF<sub>5</sub>, CHClF<sub>2</sub> or silicon tetrafluoride. As a light source which generates the light, the excimer laser, Xe-H<sub>8</sub> lamp or low pressure H<sub>8</sub> lamp is used. Content of fluorine source in the mixture is set to 1 vol% and a silicon film is locally etched.

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